



STIC Search Report

EIC 1700

STIC Database Tracking Number: 107058

**TO: Ana Fortuna
Location: CP3 5A13
Art Unit : 1723
November 6, 2003**

Case Serial Number: 09/909,488

**From: John Calve
Location: EIC 1700
CP3/4-3D62
Phone: 308-4139**

John.Calve@uspto.gov

Search Notes

Ana,

I haven't heard from the company (Koch Membranes) either by phone or email so I have to get this search off my desk. The bottom line – I didn't find much. From the company literature I know that the filter is polyamide. The NF that follows the filter may mean that it is suitable for acidic or basic solutions.

I did an assignee search in Chemical Abstract, Derwent and Japio, but couldn't obtain any information on the patents owned by Koch. I did an Index search in Dialog to determine which files had the most hits for Koch membranes. I have attached the company information and the search.

If you have any questions, please feel free to call me.

John 308-4139

SEARCH REQUEST FORM

Scientific and Technical Information Center

Access DB# 107058
correct
SM #
707, 488

Requester's Full Name: ANA M. FORTUNE Examiner #: 69644 Date: 10/29/03
Art Unit: 1723 Phone Number 308-3857 Serial Number: 09/2999651/FMEN6
Mail Box and Bldg/Room Location: CP3-5A13 Results Format Preferred (circle): PAPER ☒ DISK ☐ E-MAIL ☐

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: HF-Membrane apparatus & method

Inventors (please provide full names): _____

Earliest Priority Filing Date: 7/2001

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for Nanofiltration
membrane, TFC-SRI (Koch MEMBRANES
INC.)

and also for
Publication N 214 of attached
document

US 20030015470 PN.

Index Search.

Called Lexis twice 1st time w/ her
about search.

STAFF USE ONLY

Searcher:	Type of Search	Vendors and cost where applicable
<u>JC</u>	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: <u>11/3/03</u>	Bibliographic _____	Dr. Link _____
Date Completed: <u>11/5/03</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>120</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>12</u>	Other _____	Other (specify) _____

? ? show files

File 34:SciSearch(R) Cited Ref Sci 1990-2003/Nov W1
(c) 2003 Inst for Sci Info

File 51:Food Sci.&Tech.Abs 1969-2003/Nov W1
(c) 2003 FSTA IFIS Publishing

File 89:GeoRef 1785-2003/Nov B1
(c) 2003 American Geological Institute

File 96:FLUIDEX 1972-2003/Oct
(c) 2003 Elsevier Science Ltd.

File 110:WasteInfo 1974-2002/Jul
(c) 2002 AEA Techn Env.

File 149:TGG Health&Wellness DB(SM) 1976-2003/Oct W2
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File 198:Health Devices Alerts(R) 1977-2003/Nov W2
(c) 2003 ECRI-nonprft agncy

File 245:WATERNET(TM) 1971-2003Q2
(c) 2003 American Water Works Association

File 248:PIRA 1975-2003/Nov W1
(c) 2003 Pira International

File 292:GEOBASE(TM) 1980-2003/Nov
(c) 2003 Elsevier Science Ltd.

?

Set	Items	Description
S1	46	KOCH?(2N) (MEMBRAN? OR FILTER? OR FILTR?)
S2	1288	SR1 OR SR-1 OR TFC(W)S OR TFCS OR TFSCR
S3	5	KOCH?(3N)S2
S4	69766	(WATER? OR H2O) (2N) (TREAT? OR FILTR? OR FILTER? OR CLEAN?)
S5	9524	KOCH?
S6	72	*deleted* S4 AND S5
S7	2	S6 AND S2
S8	6810	KOCH? ?
S9	56	S8 AND S4
S10	6049	KOCH
S11	54	S10 AND S4
S12	2	S11 AND S2
S13	5	S1 AND S2
S14	5	S3 OR S7 OR S12 OR S13
S15	52	S11 NOT S14
S16	27	S15 FROM 149
S17	25	S15 NOT S16

? t s14/7,de/1-5

14/7,DE/1 (Item 1 from file: 34)

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2003 Inst for Sci Info. All rts. reserv.

11029741 Genuine Article#: 599QY Number of References: 6
Title: Modification of commercial %%%water%%% %%%treatment%%% membranes by
ion beam irradiation
Author(s): Good K; Escobar I (REPRINT) ; Xu XL; Coleman M; Ponting M
Corporate Source: Univ Toledo,Dept Environm Chem & Engn,2801 W Bancroft
St,Nitschke Hall 3048/Toledo//OH/43606 (REPRINT); Univ Toledo,Dept
Environm Chem & Engn,Toledo//OH/43606
Journal: DESALINATION, 2002, V146, N1-3,SI (SEP 10), P259-264
ISSN: 0011-9164 Publication date: 20020910
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
Language: English Document Type: ARTICLE

Abstract: The effect of ion beam irradiation on the performance of two commercial %%%water%%% %%%treatment%%% membranes was studied. The results of this testing indicate that the irradiation induced structure modifications had a positive impact on the membranes application to wastewater treatment. Irradiation of the first %%%membrane%%% (%%%TFC%%%-%%%S%%%, %%%Koch%%% %%%Membrane%%% Systems, San Diego, CA) led to a slight decrease in selectivity, but this was outweighed by the positive effects of the irradiation. Not only did the irradiation improve both abiotic and biofouling resistance, it also doubled the membrane solvent mass transfer coefficient (MTC). Ion beam irradiation also improved the performance of the second membrane (NTR 7450, Hydranautics, San Diego, CA). Water quality testing revealed similar removal of contaminants, while fouling tests indicated an improvement in the membrane's resistance to fouling, especially in the case of biofouling.

Descriptors--Author Keywords: membrane ; irradiation ; wastewater ; transport properties ; fouling

14/7,DE/2 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2003 Inst for Sci Info. All rts. reserv.

10754808 Genuine Article#: 563KT Number of References: 31
Title: Comparison of commercial membranes in nanofiltration of sweet whey
Author(s): Rasanen E (REPRINT) ; Nystrom NB; Sahlstein J; Tossavainen O
Corporate Source: Valio Ltd,Res & Dev,POB 30/Valio 00039//Finland/
(REPRINT); Valio Ltd,Res & Dev,Valio 00039//Finland//; Lappeenranta Univ
Technol,Dept Chem Technol, Lab Tech Polymer Chem,Lappeenranta
53851//Finland/
Journal: LAIT, 2002, V82, N3 (MAY-JUN), P343-356
ISSN: 0023-7302 **Publication date:** 20020500
Publisher: E D P SCIENCES, 7, AVE DU HOGGAR, PARC D ACTIVITES COURTABOEUF,
BP 112, F-91944 LES ULIS CEDEXA, FRANCE
Language: English **Document Type:** ARTICLE

Abstract: The performance of commercial nanofiltration membranes was studied during concentration and demineralization of sweet whey. The tested membranes were Desal-5 DK, NF45 and %%%Koch%%% %%%SR1%%%. Two different generations of the NF45 membranes were studied. Concentration of whey was made both with a flat-sheet module and in a pilot plant equipped with one spiral wound element. The new generation of the NF45 membrane has comparable retention characteristics with the Desal-5 DK. The %%%Koch%%% %%%SR1%%% %%%membrane%%% has lower salt and lactose retention than the Desal-5 DK and similar retention characteristics to the older generation of the NF45, which is no longer commercially available. When using the new generation of the NF45 membrane one can expect lower permeate flux and higher retention of salts and lactose than before with the older generation of the NF45 membrane. The highest permeate fluxes of the tested membranes were reached with the %%%Koch%%% %%%SR1%%% %%%membrane%%%. Concentration of sweet whey with a flat-sheet module and a spiral wound element resulted in similar concentrate composition. Therefore, the flat-sheet module may be used when information on product composition is being investigated. The permeate flux was higher with the flat-sheet module than with the spiral wound element. Thus, either the spiral wound module is more prone to concentration polarization than the flat-sheet module or one can assume that the whole membrane area of the spiral wound module is not used effectively.

Descriptors--Author Keywords: nanofiltration ; spiral wound module ; flat-sheet module ; sweet whey ; concentration

14/7,DE/3 (Item 1 from file: 51)
DIALOG(R)File 51:Food Sci.&Tech.Abs
(c) 2003 FSTA IFIS Publishing. All rts. reserv.

00872174 2003-Pn0247 SUBFILE: FSTA

Comparison of commercial membranes in nanofiltration of sweet whey.
Rasanen, E.; Nystrom, M.; Sahlstein, J.; Tossavainen, O.
Res. & Dev., Valio Ltd., PO Box 30, 00039 Valio, Finland. Tel. 358 10
381 3224. Fax 358 10 381 3219. E-mail Elina.Rasanen(a)Valio.fi
Lait 2002 , 82 (3) 343-356
NOTE: 31 ref.

DOCUMENT TYPE: Journal Article ISSN: 0023-7302

LANGUAGE: English SUMMARY LANGUAGE: French

Performance of commercial nanofiltration membranes was studied during concn. and demineralization of sweet whey. Membranes Desal-5 DK, NF45 and %%%Koch%%% %%%SR1%%% were tested, including 2 generations of the NF45 membrane. Concentration of whey was performed both with a flat-sheet module and in a pilot plant equipped with 1 spiral wound element. The new generation of the NF45 membrane had comparable retention characteristics with Desal-5 DK. The %%%Koch%%% %%%SR1%%% %%%membrane%%% had lower salt and lactose retention than Desal-5 DK and similar retention characteristics to the older generation of NF45, which is no longer commercially available. The new generation of the NF45 membrane produces lower permeate flux and higher retention of salts and lactose than the older generation. Highest permeate fluxes of the tested membranes were activated with the %%%Koch%%% %%%SR1%%% %%%membrane%%%. Concentration of sweet whey with a flat-sheet module and a spiral wound element resulted in similar concentrate composition. It is suggested therefore that the flat-sheet module may be used when information on product composition is being investigated. Permeate flux was higher with the flat-sheet module than with the spiral wound element. This suggests that either the spiral wound module is more prone to concentration polarization than the flat-sheet module or the entire membrane area of the spiral wound module is not used effectively.

DESCRIPTORS (HEADINGS): FILTRATION; MEMBRANES; WHEY

DESCRIPTORS: NANOFILTRATION

DESCRIPTORS (TRADE/BRAND NAME): Desal-5 DK; %%%Koch%%% %%%SR1%%%; NF45

14/7,DE/4 (Item 1 from file: 96)
DIALOG(R)File 96:FLUIDEX
(c) 2003 Elsevier Science Ltd. All rts. reserv.

00407800 FLUIDEX NO: 0477447

Modification of commercial %%%water%%% %%%treatment%%% membranes by ion beam irradiation

AUTHOR(S): Good K.; Escobar I.; Xu X.; Coleman M.; Ponting M.

CORPORATE SOURCE: Department of Chemical/Envrn. Eng., University of Toledo,
2801 West Bancroft, Toledo, OH 43606, United States

AUTHOR EMAIL: isabel.escobar@utoledo.edu

Desalination, 146/1-3 (259-264), 2002

PUBLICATION DATE: September 10, 2002

CODEN: DSLNA ISSN: 0011-9164

COUNTRY OF PUBLICATION: Netherlands

PUBLISHER ITEM IDENTIFIER: S0011916402004848

DOCUMENT TYPE: Journal; Article

RECORD TYPE: ABSTRACT

LANGUAGES: English SUMMARY LANGUAGES: English

NO. OF REFERENCES: 6

The effect of ion beam irradiation on the performance of two commercial water treatment membranes was studied. The results of this testing indicate that the irradiation induced structure modifications had a positive impact on the membranes application to wastewater treatment. Irradiation of the first membrane (TFC-S, Koch Membrane Systems, San Diego, CA) led to a slight decrease in selectivity, but this was outweighed by the positive effects of the irradiation. Not only did the irradiation improve both abiotic and biofouling resistance, it also doubled the membrane solvent mass transfer coefficient (MTC). Ion beam irradiation also improved the performance of the second membrane (NTR 7450, Hydranautics, San Diego, CA). Water quality testing revealed similar removal of contaminants, while fouling tests indicated an improvement in the membrane's resistance to fouling, especially in the case of biofouling.

DESCRIPTORS: WATER TREATMENT; PERFORMANCE; IRRADIATION;
MEMBRANE; FOULING

14/7,DE/5 (Item 1 from file: 245)
DIALOG(R)File 245:WATERNET(TM)
(c) 2003 American Water Works Association. All rts. reserv.

056183

Effect of Solution Composition on the Performance and Fouling of Polymeric Reverse Osmosis and Nanofiltration Membranes

Peng, Weihua ; Escobar, Isabel C.

The University of Toledo, Civil Engineering Department, Toledo, OH ; The University of Toledo, Chemical and Environmental Engineering Department, Toledo, OH

2002 Annual Conference Proceedings; American Water Works Association
New Orleans, LA

June 16-20, 2002

2002

Publ: AWWA

CODEN: PWACDO

Availability: AWWA

9 references, figures

Language: English

Document Type: Conf Proc

The main objective of this study was to investigate the influence of the feed solution chemical composition on the performance and fouling, both biofouling and abiotic fouling, of various reverse osmosis (RO) and nanofiltration (NF) membranes. Fouling experiments were performed as a factorial design with four independent variables: divalent cation concentration, monovalent cation concentration, dissolved organic carbon (DOC) concentration and membrane type denoted by Molecule Weight Cut-Off (MWCO) and roughness, each with three levels to produce a 34 factorial design. The membranes tested were the following: TFC-S (Koch Membrane Systems, San Diego, CA) with MWCO of 200Da and the roughness of 35.64nm; 4040-UHA- ESPA (Hydranautics, San Diego, CA) with MWCO of 100-300Da and the roughness of 78.39nm; and, NTR 7450 (Hydranautics, San Diego, CA) with MWCO of 500Da and the roughness of 27.84nm. These were run at pressures of 280 psi, 120 psi, and 120 psi, respectively. Experiments were conducted using a flat sheet test unit (Osmonics, Minneetonna, MN), which contained a cell with 155cm² active membrane area. Feed water was pumped into the test unit from feed reservoir, and all the concentrate flux was recycled to the feed tank to increase the fouling potential on the membranes. New membranes were rinsed with deionized (DI) water, then soaked membrane-skin-down in DI

water overnight, and rinsed again immediately before installation into the filtration cell unit. Abiotic fouling and biofouling tests on the fouled membrane were also conducted to characterize the fouling on the membrane after each experiment. The membrane specimens were soaked in a basic (0.1M NaOH) solution overnight and then UV254 and turbidity were measured to characterize the abiotic fouling of the membrane. Biofouling of the membrane was measured by detaching the biofilm from the membrane surface and measuring the heterotrophic plate counts (HPC).

Descriptors: Membranes ; Fouling ; Performance ; Nanofiltration ; Desalination ; Reverse Osmosis ; Design ; Turbidity ; Organic Carbon ; Filtration ; Biofilm ; Heterotrophic Plate Count ; Chemicals
? t sl7/7,de/1-25

17/7,DE/1 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
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11443983 Genuine Article#: 654DD Number of References: 18
Title: Effects of plant nutrition on the expression of abdominal discoloration in *Phytoseiulus persimilis* (Acari : Phytoseiidae)
Author(s): Bjornson S (REPRINT) ; Raworth DA
Corporate Source: St Marys Univ, Dept Biol, 923 Robie St/Halifax/NS B3H 3C3/Canada/ (REPRINT); St Marys Univ, Dept Biol, Halifax/NS B3H 3C3/Canada/; Agr & Agri Food Canada, Pacific Agri Food Res Ctr, Agassiz/BC V0M 1A0/Canada/
Journal: CANADIAN ENTOMOLOGIST, 2003, V135, N1 (JAN-FEB), P129-138
ISSN: 0008-347X Publication date: 20030100
Publisher: ENTOMOL SOC CANADA, 393 WINSTON AVE, OTTAWA, ONTARIO K2A 1Y8, CANADA

→ Language: English Document Type: ARTICLE

Abstract: The effect of plant nutrition on the expression of abdominal discoloration in *Phytoseiulus persimilis* Athias-Henriot was investigated. *Phytoseiulus persimilis* were fed spider mites, *Tetranychus urticae* %%%Koch%%%. (Acari: Tetranychidae), that were reared on bean, *Phaseolus vulgaris* L. (Fabaceae), plants %%%treated%%% with distilled %%%water%%% or one of three concentrations of 20-20-20 fertilizer (0.6, 2.4, and 3.8 g/L). Symptoms observed in *P. persimilis* included white stripes along the sides of the body in the region of the Malpighian tubules, white coloration of the rectum, or a combination of these symptoms. The proportion of observations of white symptoms in *P. persimilis* increased in an asymptotic curvilinear fashion as fertilizer concentration increased. There was no significant difference in life-history characteristics of *P. persimilis* from the four treatments, including total fecundity, mean daily oviposition, oviposition period, post-oviposition period, or adult survival. Peak oviposition for mites from all treatments (4.9 eggs per female per day) occurred 2-3 days following mating. Thereafter, mean fecundity was greater than 4 eggs per female per day until day 11, and greater than 3 eggs per female per day until day 15, followed by a sharp decline. Following death, individual mites were examined for microsporidia, but none were detected. Results suggest that the expression of white abdominal discoloration in *P. persimilis* is related, at least in part, to plant nutrition; symptoms are an expression of normal excretory function in *P. persimilis*; and white abdominal discoloration does not necessarily affect predator performance.

17/7,DE/2 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2003 Inst for Sci Info. All rts. reserv.

10928478 Genuine Article#: 584BU Number of References: 28
Title: Fecundity in twospotted spider mite (Acari : Tetranychidae) is increased by direct and systemic exposure to imidacloprid
Author(s): James DG (REPRINT) ; Price TS
Corporate Source: Washington State Univ,Irrigated Agr Res & Extens Ctr, Dept Entomol,24106 N Bunn Rd/Prosser//WA/99350 (REPRINT); Washington State Univ,Irrigated Agr Res & Extens Ctr, Dept Entomol,Prosser//WA/99350
Journal: JOURNAL OF ECONOMIC ENTOMOLOGY, 2002, V95, N4 (AUG), P729-732
ISSN: 0022-0493 Publication date: 20020800
Publisher: ENTOMOL SOC AMER, 9301 ANNAPOLIS RD, LANHAM, MD 20706 USA
Language: English Document Type: ARTICLE
Abstract: The effect of imidacloprid on fecundity of twospotted spider mites. *Tetranychus urticae* Koch, was investigated in laboratory experiments using individual females on bean leaf discs. Mites were directly exposed to spray formulations of imidacloprid or fed on discs cut from a systemically treated bean plant. Imidacloprid-treated *T. urticae* produced 10-26% more eggs during the first 12 d of adult life and 19-23% more during adulthood compared with a water-only treatment. Increased egg production occurred immediately after exposure and lasted for about 15 d in sprayed mites. In mites exposed to imidacloprid by ingestion, increased egg production was not apparent until after 6 d and lasted until about day 18. Longevity was significantly greater in mites that ingested imidacloprid but not in sprayed mites. The significance and importance of imidacloprid-stimulation of fecundity in *T. urticae* to pest management in crop systems like hops, which routinely use this insecticide, is discussed.
Descriptors--Author Keywords: *Tetranychus urticae* ; twospotted spider mite ; imidacloprid ; hormoligosis ; fecundity

17/7,DE/3 (Item 3 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
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09741067 Genuine Article#: 444EG Number of References: 41
Title: Variability in phenotypic traits in core and peripheral populations of wild barley *Hordeum spontaneum* Koch
Author(s): Volis S (REPRINT) ; Mendlinger S; Orlovsky N
Corporate Source: Ben Gurion Univ Negev,Jacob Blaustein Inst Desert Res, Mitrani Dept Desert Ecol,IL-84990 Sede Boqer//Israel/ (REPRINT); Ben Gurion Univ Negev,Jacob Blaustein Inst Desert Res, Mitrani Dept Desert Ecol,IL-84990 Sede Boqer//Israel/; Ben Gurion Univ Negev,Inst Appl Res,IL-84105 Beer Sheva//Israel/; Desert Res Inst,Ashgabat//Turkmenistan/
Journal: HEREDITAS, 2000, V133, N3, P235-247
ISSN: 0018-0661 Publication date: 20000000
Publisher: HEREDITAS-DISTRIBUTION, GJORLOFFSGATAN 121, 261 34 LANDSKRONA, SWEDEN
Language: English Document Type: ARTICLE
Abstract: Populations of wild barley, *H. spontaneum* Koch, were collected in two countries, Israel and Turkmenistan, in environments representing two similar sharp dunes of aridity. This allowed us to use the same criteria to define species core and periphery in two regions. Plants from 10 Israeli and 19 Turkmenian populations were grown in a field trial with three water treatments and compared for amount and structure of variation in phenological and morphological traits. Extent of variation was similar in populations at species

border (periphery by aridity criterion) or at species border and near it (by habitat), and in populations inhabiting favorable environments away from the border (core). In contrast, two regions (Israel and Turkmenistan) exhibited different amount of variation in phenotypic traits. Israeli populations were more diverse than Turkmenian populations in all except one phenotypic traits and the variation was differently structured among regionally specific core and periphery. While Turkmenian core and periphery defined by either criterion did not differ for all except one trait, corresponding Israeli populations exhibited opposite patterns of variation for trait complexes. Israeli core (Mediterranean) populations were twice as variable than peripheral (desert) populations in parameters of reproductive growth (stem, spike and awn length) and grain filling (spikelet weight) and half as variable in the length of flag and penultimate leaves and onset of reproduction. Possible modes of regionally specific natural selection as a cause of regional/local variation in phenotypic trails are discussed.

17/7,DE/4 (Item 4 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
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09579747 Genuine Article#: 421RN Number of References: 32
Title: Effects of neem seed derivatives on behavioral and physiological responses of the *Cosmopolites sordidus* (Coleoptera : Curculionidae)
Author(s): Musabyimana T (REPRINT) ; Saxena RC; Kairu EW; Ogol CPKO; Khan ZR

Corporate Source: Ctr Rech & Dev Hort, 430 Boul Gouin/St Jean/PQ J3B 3E6/Canada/ (REPRINT); Int Ctr Insect Physiol & Ecol, Nairobi//Kenya/
Journal: JOURNAL OF ECONOMIC ENTOMOLOGY, 2001, V94, N2 (APR), P449-454
ISSN: 0022-0493 Publication date: 20010400
Publisher: ENTOMOL SOC AMER, 9301 ANNAPOLIS RD, LANHAM, MD 20706 USA
Language: English Document Type: ARTICLE

Abstract: Both in a choice and multi-choice laboratory tests, fewer adults of the banana root borer, *Cosmopolites sordidus* (Germar), settled under the corms of the susceptible banana "Nakyetengu" treated with 5% aqueous extract of neem seed powder or cake or 2.5 and 5% emulsified neem oil than on %%%water%%-%%%treated%% corms. Feeding damage by larvae on banana pseudostem discs treated with 5% extract of powdered neem seed, kernel, oil cake, or 5% emulsified neem oil was significantly less than on untreated discs. The larvae took much longer to locate feeding sites, initiate feeding and bore into pseudostem discs treated with extract of powdered neem seed or kernel. Few larvae survived when confined for 14d on neem-treated banana pseudostems; the survivors weighed two to four times less than the larvae developing on untreated pseudostems. Females deposited up to 75% fewer eggs on neem-treated corms. In addition, egg hatching was reduced on neem-treated corms. The higher the concentration of neem materials the more severe the effect.

Descriptors--Author Keywords: *Cosmopolites sordidus* ; banana ; neem ; *Azadirachta indica*

17/7,DE/5 (Item 5 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2003 Inst for Sci Info. All rts. reserv.

09027364 Genuine Article#: 358JJ Number of References: 11
Title: Pyridaben baseline assays for adult female European red mite (Acari: Tetranychidae) and eggs

Author(s): Shearer PW (REPRINT)
Corporate Source: RUTGERS STATE UNIV, COOK COLL, NEW JERSEY AGR EXPT STN,
DEPT EXTENS SPECIALISTS, 88 LIPMAN DR/NEW BRUNSWICK//NJ/08901 (REPRINT)
Journal: JOURNAL OF AGRICULTURAL AND URBAN ENTOMOLOGY, 2000, V17, N2 (APR)
, P65-69
ISSN: 1523-5475 Publication date: 20000400
Publisher: SOUTH CAROLINA ENTOMOLOGICAL SOC, PO BOX 582, CLEMSON, SC 29633
Language: English Document Type: ARTICLE
Abstract: Bioassays of *Panonychus ulmi* (Koch) (Acari: Tetranychidae)
with the miticide/insecticide pyridaben indicate this product is toxic
to both eggs and motile stages. For contact ovicidal tests, adult
female *P. ulmi* were allowed to lay eggs on untreated peach leaf disks.
Mites were removed at 18 h then the leaf disks with eggs were dipped
for 5 s in serial dilutions of pyridaben or water as a control. Treated
leaf disks with eggs were then placed on wet cotton and held in a
growth chamber to allow eggs to hatch. For residual ovicidal assays,
adult female *P. ulmi* were allowed to oviposit either on water-
treated peach leaf disks or leaf disks treated with serial
dilutions of pyridaben for 18 h before removal of the mites. Adult
mortality was assessed when the mites were removed from the residual
ovicidal assays. Concentration-response line parameters for treated
eggs from the contact ovicide assays were: LC(50)s (2.4-3.3 ppm),
LC(90)s (7.2-8.7 ppm), slopes (2.3-2.9). Line parameters from the
residual ovicidal assay were: LC50 (32 ppm), LC90 (130 ppm), slope
(2.1). Adult female *P. ulmi* placed on treated surfaces were more
sensitive to pyridaben than eggs. Concentration-response line
parameters for the residual adult *P. ulmi* assays were: LC(50)s (1.1-1.5
ppm), LC(90)s (2.6-3.9 ppm), slopes (2.8-3.3). Because pyridaben is
toxic to several life stages of *P. ulmi*, use patterns should be part of
an overall miticide resistance management program.
Descriptors--Author Keywords: baseline assays ; miticide ; ovicide ;
Panonychus ulmi ; pyridaben ; resistance management

17/7,DE/6 (Item 6 from file: 34)
DIALOG(R) File 34:SciSearch(R) Cited Ref Sci
(c) 2003 Inst for Sci Info. All rts. reserv.

07390933 Genuine Article#: 159JL Number of References: 23
Title: Natural durability and waterborne preservative
treatability of tamarack
Author(s): Srinivasan U (REPRINT) ; Ung T; Taylor A; Cooper PA
Corporate Source: HUGH JOHN FLEMMING CTR, WOOD SCI & TECHNOL CTR, 1350
REGENT ST/FREDERICTON/NB E3C 2G6/CANADA/ (REPRINT); UNIV
TORONTO, /TORONTO/ON M5S 3B3/CANADA/
Journal: FOREST PRODUCTS JOURNAL, 1999, V49, N1 (JAN), P82-87
ISSN: 0015-7473 Publication date: 19990100
Publisher: FOREST PRODUCTS SOC, 2801 MARSHALL COURT, MADISON, WI 53705-2295
Language: English Document Type: ARTICLE
Abstract: Eastern larch or tamarack (*Larix laricina* (duRoi) Koch) lumber from New Brunswick was evaluated for heartwood natural
durability by laboratory decay tests and for preservative treatability
with chromated copper arsenate (CCA-C) and ammoniacal copper arsenate
(ACA). The CCA fixation and leaching characteristics of tamarack
sapwood and heartwood were also evaluated. The natural durability of
tamarack heartwood exposed to two brown-rot fungi, *Gloeophyllum trabeum*
and *Postia placenta*, was moderate to low and generally inferior to that
of heartwood of spruce (*Picea* spp.) and white pine (*Pinus strobus* L.)
and similar to that of red pine (*Pinus resinosa* Ait.) sapwood and
heartwood. The decay resistance of tamarack was variable, and not

related to extractive content. CCA-C penetration into both sapwood and heartwood was poor. ACA fully penetrated the sapwood, but penetrated the heartwood only marginally better than the CCA-C. The rate of CCA fixation, as defined by rate of reduction of hexavalent chromium varied greatly between sapwood and heartwood and between different heartwood samples. Heartwood fixed much faster than sapwood, averaging 2 to 3 days at 21 degrees C and 5 to 6 hours at 50 degrees C as compared to 15 to 20 days and 30 to 35 hours, respectively, for sapwood. The fixation rate was directly related to the hot water soluble extractive content of the wood. The quality of fixation, as defined by resistance to leaching of the CCA components, was much lower for the faster reacting heartwood. The combination of poor penetration and low CCA stability in tamarack heartwood suggests that this preservative is not appropriate for this species.

17/7,DE/7 (Item 7 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
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05919888 Genuine Article#: XG819 Number of References: 23
Title: Postharvest disinfestation of diapausing and non-diapausing twospotted spider mite (*Tetranychus urticae*) on persimmons: Hot water immersion and coolstorage
Author(s): Lester PJ (REPRINT) ; Dentener PR; Bennett KV; Connolly PG
Corporate Source: QUEENS UNIV,DEPT BIOL/KINGSTON/ON K7L 3N6/CANADA/ (REPRINT); HORT & FOOD RES INST NEW ZEALAND LTD,MT ALBERT RES CTR/AUCKLAND//NEW ZEALAND/
Journal: ENTOMOLOGIA EXPERIMENTALIS ET APPLICATA, 1997, V83, N2 (MAY), P 189-193
ISSN: 0013-8703 Publication date: 19970500
Publisher: KLUWER ACADEMIC PUBL, SPUIBOULEVARD 50, PO BOX 17, 3300 AA DORDRECHT, NETHERLANDS
Language: English Document Type: ARTICLE
Abstract: The mortality response of diapausing and non-diapausing twospotted spider mite (*Tetranychus urticae* %%%Koch%%%) on persimmons to hot %%%water%%% immersion %%%treatments%%% between 44 and 54 degrees C was examined, for potential as a quarantine treatment. The mean immersion time for mean 99% mortality (LT99) of diapausing mites at 44 degrees C was 211 min, and this time decreased with increasing temperature to 3.6 min at 54 degrees C. Non-diapausing mites were found to be less tolerant to temperatures below 48 degrees C, with an estimated LT99 of 102 min at 44 degrees C, but had similar thermotolerance above 48 degrees C. In 47 degrees C water the immersion time required to kill 99% of diapausing mites was estimated at 67 min. This time was not reduced by subsequent coolstorage at 0 degrees C for up to eight weeks. Rather, coolstorage had the effect of keeping mites alive, relative to LT99 estimates calculated for mites stored at 20 degrees C. Similarly the thermotolerance of mites did not change with increased time in diapause, even though mites in diapause for 12 weeks had high control mortality. Hot water immersion appears to be a potentially useful disinfestation method for persimmons.
Descriptors--Author Keywords: Acarina ; tetranychidae ; diapause ; hot %%%water%%% immersion ; quarantine %%%treatment%%% ; coolstorage

17/7,DE/8 (Item 8 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2003 Inst for Sci Info. All rts. reserv.

04099193 Genuine Article#: RE162 Number of References: 48

Title: ENVIRONMENT AND ONTOGENY MODIFY LOBLOLLY-PINE RESPONSE TO INDUCED
ACUTE WATER DEFICITS AND BARK BEETLE ATTACK

Author(s): LORIO PL; STEPHEN FM; PAINE TD

Corporate Source: US FOREST SERV, SO FOREST EXPT STN, 2500 SHREVEPORT
HIGHWAY/PINEVILLE//LA/71360; UNIV ARKANSAS, DEPT
ENTOMOL/FAYETTEVILLE//AR/72701; UNIV CALIF RIVERSIDE, DEPT
ENTOMOL/RIVERSIDE//CA/92521

Journal: FOREST ECOLOGY AND MANAGEMENT, 1995, V73, N1-3 (MAY), P97-110
ISSN: 0378-1127

Language: ENGLISH Document Type: ARTICLE

Abstract: We evaluated the impact of tree resistance on within-tree population dynamics of southern pine beetle, *Dendroctonus frontalis* Zimm. (Coleoptera: Scolytidae) in loblolly pine, *Pinus taeda* L., as affected by prevailing water regimes, acute water deficits imposed by applying dry-ice (solid CO₂) collars to tree boles, and by the seasonal ontogeny of pines. We conducted the study in the spring of 1986, when bole cambial growth had not yet shifted from earlywood to latewood formation, and in the summer of 1987, when latewood formation was well advanced. In each year there were five treated and five control trees. In 1986, under relatively well-watered conditions, results did not support the hypothesis that induced acute water deficit will enhance success of southern pine beetle attack and brood production. All trees were readily attacked and overcome with no apparent beneficial effects of the dry-ice treatment on within-tree population dynamics. In 1987, under drier conditions, results supported the hypothesis. Treated trees again were readily colonized, but three of the five control trees resisted attack to the extent that all attacks eventually failed. In 1986, all study trees maintained relatively high water potentials for more than 3 weeks following beetle attack. However, resin yields from bark wounds decreased rapidly. In contrast, water potentials of controls decreased gradually in 1987 and resin yields increased as controls resisted beetle attacks. Water potential of treated trees dropped rapidly 2 weeks after initial beetle attack, and resin yields decreased rapidly, as they did in 1986. Consideration of environmental conditions and ontogenetic stage of host trees is extremely important in attempts to assess the effects of manipulative treatments on tree susceptibility to beetle attacks. Further, they illustrate the dynamic nature of tree resistance to beetle attack in the absence of abnormal stresses. Simultaneous study of environmental conditions, as well as physiological changes associated with ontogeny of trees, can effectively support research on interactions between bark beetles and host trees.

Descriptors--Author Keywords: DENDROCTONUS FRONTALIS ; PINUS TAEDA ; WATER POTENTIAL ; GROWTH ; DIFFERENTIATION

17/7,DE/9 (Item 9 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
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03948037 Genuine Article#: QU694 Number of References: 0
(NO REFS KEYED)

Title: INFLUENCE OF YOUNG POTTED APPLE TREE WATER STATUS ON EUROPEAN RED
MITE (ACARI, TETRANYCHIDAE) ABUNDANCE

Author(s): SAUGE MH; FAUVEL G

Corporate Source: INRA, ZOOL & APIDOL LAB, DOMAINE ST PAUL/F-84143
MONTFAVET//FRANCE/

Journal: EXPERIMENTAL & APPLIED ACAROLOGY, 1994, V18, N11-1 (NOV-DEC), P
659-668

ISSN: 0168-8162

Language: ENGLISH Document Type: ARTICLE

Abstract: The effect of water-stress on population growth of the European Red Mite (ERM) *Panonychus ulmi* (Koch) was tested in a plastic shelter using young potted apple trees under three water treatments. Mite abundance was significantly greater with higher water supply. The relationship between plant water status and mite number was non-linear, both treatments with leaf water potential from -30 to about -5 bars bearing the lower mite populations. Over the threshold value of -5 bars, mite number sharply increased four times. A non-linear regression analysis showed that the stomatal conductance explained 49.7% of the variance in mite number. Low leaf surface humidity resulting from reduced leaf transpiration of water-stressed trees may increase mite egg and larval mortalities. Daily leaf surface temperatures on the water-stressed trees averaged 1.5 degrees C higher than on the other trees, but did not result in an increase in mite populations, because of the negative influence of low leaf humidity.

Descriptors--Author Keywords: ACARI, TETRANYCHIDAE ; PANONYCHUS ULMI ; APPLE TREE ; MALUS PUMILA ; WATER STATUS

17/7,DE/10 (Item 10 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
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03913489 Genuine Article#: QR334 Number of References: 9
Title: EFFICACY OF PACKED-COLUMN DESIGNS FOR REDUCING MORTALITY OF RAINBOW-TROUT EGGS AND FRY
Author(s): LEGAULT CE; ALOISI DB
Corporate Source: M-117,BOX 131/ENGADINE//MI/49827; US FISH & WILDLIFE SERV,NEOSHO NATL FISH HATCHERY/NEOSHO//MO/64850
Journal: PROGRESSIVE FISH-CULTURIST, 1995, V57, N2 (APR), P124-127
ISSN: 0033-0779

Language: ENGLISH Document Type: NOTE

Abstract: An experiment was performed to determine the effect of open and closed packed columns on dissolved gas levels and on mortality of eggs and sac fry of rainbow trout (*Oncorhynchus mykiss*) at Neosho National Fish Hatchery from March 9 to April 9, 1993. Two water treatments were tested: (1) treatment with a sealed column packed with 1-in Koch rings and oxygen injection, and (2) treatment with an open column packed with 1-in Koch rings. Untreated springwater was tested for comparison. Statistically, rainbow trout reared in untreated springwater had significantly higher mortality ($P < 0.05$) than trout reared in both packed column treatments; mortality did not differ significantly between column treatments. Total dissolved gas saturation in all three groups remained below 100% and did not influence mortality. Untreated springwater had the highest mean nitrogen saturation (103.5%), which may have contributed to egg and fry mortality. Water in the open packed column and in the sealed packed column with oxygen injection had higher mean oxygen saturations than untreated springwater, which may have been beneficial.

17/7,DE/11 (Item 11 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2003 Inst for Sci Info. All rts. reserv.

02911450 Genuine Article#: MQ427 Number of References: 29

Title: EFFECTS OF LOW-TEMPERATURE AND ELEVATED CO₂ TREATMENTS AND OF HEAT-TREATMENTS FOR INSECT DISINFESTATION ON SOME NATIVE-AUSTRALIAN CUT FLOWERS

Author(s): SEATON KA; JOYCE DC

Corporate Source: CSIRO, DIV HORT, 306 CARMODY RD/ST LUCIA/QLD

4067/AUSTRALIA/; CSIRO, DIV HORT, 306 CARMODY RD/ST LUCIA/QLD

4067/AUSTRALIA/; DEPT AGR WESTERN AUSTRALIA, HORT IND, DIV PLANT IND/S
PERTH/WA 6151/AUSTRALIA/

Journal: SCIENTIA HORTICULTURAE, 1993, V56, N2 (DEC), P119-133

ISSN: 0304-4238

Language: ENGLISH Document Type: ARTICLE

Abstract: For bioassay insects, 14 days storage at 1-degrees-C was required for 100% kill of adult flour beetles (*Tribolium confusum* %%%Koch%%%), and 10 days at 1-degrees-C killed 100% of Mediterranean fruit fly larvae (*Ceratitis capitata* Wied.). A CO₂ enriched atmosphere of between 45% and 60% (11% and 8% O₂, respectively) reduced the time required to achieve 100% mortality of these bioassay insects to 7 days at 1-degrees-C. Increasing the CO₂ content of the atmosphere to 80% (4% O₂) did not further reduce the time to achieve 100% mortality.

Vase life of red kangaroo paw (*Anigozanthos rufus*) was reduced below that of the unstored control after just 3.5 days at 1-degrees-C. Geraldton wax (*Chamelaucium uncinatum*) cultivar 'Newmarracarra' was similarly affected after 14 days, and acorn banksia (*Banksia prionotes*) after 28 days. Vase lives of Geraldton wax cultivar 'Newmarracarra' and of red kangaroo paw were not reduced following 7 days storage at 1-degrees-C in 15% CO₂, compared with controls stored in air. However, Geraldton wax and red kangaroo paw vase lives were shortened and flower colour was altered after storage for 7 days in 30% CO₂ (15% O₂). Geraldton wax and red kangaroo paw had no vase lives following storage in 80% CO₂ (4% O₂) at 1-degrees-C for 3.5 days.

Heat %%%treatments%% of hot %%%water%% dips (46-degrees-C for 30 min or 56-degrees-C for 10 min) and vapour heat (66-degrees-C for 10 min) killed 100% of adult flour beetles and Mediterranean fruit fly larvae, but damaged and shortened the vase lives of Geraldton wax and banksia.

Descriptors--Author Keywords: BANKSIA ; FLOUR BEETLE ; GERALDTON WAX ; KANGAROO PAW ; MEDITERRANEAN FRUIT FLY ; VASE LIFE

17/7,DE/12 (Item 12 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
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02596805 Genuine Article#: LP102 Number of References: 16

Title: COMPARING TURFGRASS CUMULATIVE EVAPOTRANSPIRATION CURVES

Author(s): FERNANDEZ GCJ; LOVE B

Corporate Source: UNIV NEVADA, DEPT AGR ECON/RENO//NV/89557

Journal: HORTSCIENCE, 1993, V28, N7 (JUL), P732-734

ISSN: 0018-5345

Language: ENGLISH Document Type: ARTICLE

Abstract: Twenty-five commercially available turfgrass cultivars were evaluated for cumulative evapotranspiration (ET(cum)) attributes under progressive water stress for 0 to 21 and 0 to 24 days using the gravimetric mass balance method in two greenhouse studies. At the end of the %%%water%%-stress %%%treatment%%, the cultivars were scored visually for their green appearance on a 0 (no green) to 10 (100% green) scale. The Gompertz nonlinear model gave a best fit to ET(cum) vs. days adjusted for pan evaporation variation in the greenhouse compared with monomolecular and logistic nonlinear regression models.

Two ET(cum) attributes-maximum evapotranspiration rates (ET(max)) and inflection time (t(i)) (the time when the change in ET becomes zero)-were estimated for each cultivar using the Gompertz model. Based on final ET(cum), ET(max), t(i), and greenness score, 'Bristol', 'Challenger', and 'Wabash' Kentucky bluegrass (*Poa pratensis* L.); 'Shademaster' creeping fescue (*Festuca rubra* L.); 'FRT-30149' fine fescue (*F. rubra* L.); and 'Aurora' hard fescue (*F. ovina* var. *duriuscula* L. %%%Koch%%%) were identified as low water-use cultivars. Descriptors--Author Keywords: LOW WATER USE ; WATER STRESS ; GOMPERTZ MODEL ; MAXIMUM EVAPOTRANSPIRATION RATE

17/7,DE/13 (Item 13 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
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01651104 Genuine Article#: HP364 Number of References: 14

Title: INFLUENCE OF PESTICIDE TREATMENTS ON CONSUMPTION OF
TETRANYCHUS-URTICAE [ACARINA, TETRANYCHIDAE] EGGS BY
PHYTOSEIULUS-PERSIMILIS [ACARINA, PHYTOSEIIDAE]

Author(s): PETITT FL; KARAN DJ

Corporate Source: EPCOT CTR, LAND/LAKE BUENA VISTA//FL/32830

Journal: ENTOMOPHAGA, 1991, V36, N4, P539-545

Language: ENGLISH Document Type: ARTICLE

Abstract: Choice and no-choice experiments were conducted on lima bean leaf discs to determine whether pesticide or %%%water%%% treatments would affect consumption of *Tetranychus urticae* %%%Koch%%% eggs by *Phytoseiulus persimilis* Athias-Henriot. In choice experiments, *P. persimilis* consumed significantly more untreated eggs than eggs treated with fenbutatin-oxide (600 ppm), cyhexatin (200 ppm), or water, when tested at 24, 48, or 72 h after treatment. The surfactant Triton X-100 was included in each pesticide suspension and the %%%water%%%-%%%treated%%% control at 0.1 %. On the average, treated eggs amounted to only 30 % of the total consumed (n = 1,440). The %%%water%%%-%%%treatment%%% effect was weaker than the acaricides at 24 h, but effects did not differ at 48 and 72 h.

In 24 h no-choice experiments, *P. persimilis* consumed as many eggs treated with fenbutatin-oxide, cyhexatin, water, or insecticidal soap (7 575 ppm) as untreated eggs. Fluvalinate treatment of prey eggs (89 ppm), however, resulted in a 50 % reduction in egg consumption among predators remaining on leaf discs and a 6-fold increase in abandonment of discs as compared with the untreated control. Continuous consumption of fenbutatin-oxide-treated eggs over 5d did not affect *P. persimilis* oviposition or egg viability.

Descriptors--Author Keywords: SPIDER MITE ; PREDATORY MITE ; PESTICIDES ; PREDATION ; PREY RECOGNITION ; SIDE EFFECTS

17/7,DE/14 (Item 1 from file: 51)
DIALOG(R)File 51:Food Sci.&Tech.Abs
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00868803 2002-Pa2033 SUBFILE: FSTA

Development of a standard cleaning protocol to evaluate the effect of cleaning on membrane performance.

Tran-Ha, M. H.; Wiley, D. E.; Lawrence, N. D.; Iyer, M.

Correspondence (Reprint) address, D. E. Wiley, UNESCO Cent. for Membrane Sci. & Tech., Sch. of Chem. Eng. & Ind. Chem., Univ. of New South Wales, NSW 2052, Australia. Fax 02 9385 5966. E-mail D.Wiley(a)unsw.edu.au

Australian Journal of Dairy Technology 2002 , 57 (1) 20-29

NOTE: 12 ref.

DOCUMENT TYPE: Journal Article ISSN: 0004-9433

LANGUAGE: English

Cleaning of membranes used for ultrafiltration of whey in the dairy industry is a crucial step in membrane processing. A good and efficient cleaning regime can maintain high productivity and selectivity of the membranes as well as ensure good hygiene level of the food. A standard cleaning protocol using an enzyme cleaner was developed in order to evaluate the long-term effect of cleaning on performance and life of a polysulphone ultrafiltration ~~%%Koch%%~~ HFK-131 (10 kDa mol. wt. cut off) membrane. The protocol involves 3 washing steps, using 0.05% (wt.%) citric acid, 2% (v/v) Enzyme L-Builder 95 (Ecolab) and NaOCl at 100 ppm available Cl, separated by rinsing with ~~%%filtered%%~~ ~~%%water%%~~. ~~%%Cleaning%%~~ efficiency of other enzyme cleaners used in the dairy industry, and whey processing in particular, namely CIPzyme (Novo Nordisk) and Memwash (Applied Chemicals), was evaluated against the standard protocol at both laboratory and pilot scales using reconstituted 80% cheese whey protein concentrate as the fouling agent. Membranes retained protein filtration capacity after 10 cleaning cycles using either of the 3 enzymes; CIPzyme and Memwash were more efficient than Enzyme L.

DESCRIPTORS (HEADINGS): CLEANING; ENZYMES; MEMBRANES; PROTEINS MILK; WHEY

DESCRIPTORS: WHEY PROTEINS

DESCRIPTORS (TRADE/BRAND NAME): Applied Chemicals; CIPzyme; Ecolab; Enzyme L; Memwash; Novo Nordisk

17/7,DE/15 (Item 2 from file: 51)
DIALOG(R)File 51:Food Sci.&Tech.Abs
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00835932 2001-H12651 SUBFILE: FSTA

Distillery waste ~~%%water%%~~ ~~%%treatment%%~~ by membrane ultrafiltration.
Skelton, R.; Skerratt, G.; Flemming, R.

Koch Membrane Systems, The Granary, Telegraph St., Stafford, ST17 4AT,
UK. Tel. 01785 272500. Fax 01785 223149

Brewing & Distilling International 2001 , 32 (2) 10-12

DOCUMENT TYPE: Journal Article ISSN: 0308-1265

LANGUAGE: English

An ultrafiltration process for removal of excess Cu from distillery spent lees before it is sent to conventional waste ~~%%water%%~~ ~~%%treatment%%~~ is described. A ~~%%Koch%%~~ Membrane Systems installation using 12 Super-Cor modules is used. Trials at the Tomintoul Distillery in the Grampian region of Scotland are reported. This distillery is remote from mains drainage and has its own effluent treatment facilities; consent for discharge of treated effluent into the River Livet include a max. dissolved Cu concn. of 1.0 mg/l and a 95-percentile value LESS THAN OR EQUAL 0.5 mg/l. Typically, spent lees from the stills may contain Cu at 25-40 mg/l. The effluent is adjusted to pH 9-10 to precipitate Cu before it is passed through the ultrafiltration system; solids, including the precipitated Cu, are retained by the membrane, while the liquid passes to the effluent treatment facilities. The membranes need washing with recycled permeate twice/wk and with a proprietary cleaning agent once/wk. Trials showed that this ultrafiltration installation is very successful in reduction of the Cu concn. in treated effluent. It is intended that the ultrafiltration unit will be operated intermittently, on an as-needed basis, to maintain Cu concn. in the treated effluents at acceptable levels.

DESCRIPTORS (HEADINGS): COPPER; DISTILLERIES; SPIRITS; ULTRAFILTRATION;
WASTE WATER

DESCRIPTORS: CU; DISTILLERIES EFFLUENTS; WHISKY

DESCRIPTORS (TRADE/BRAND NAME): ~~%%Koch%%~~ Membrane Systems; Tomintoul

Distillery

17/7,DE/16 (Item 3 from file: 51)
DIALOG(R)File 51:Food Sci.&Tech.Abs
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00676854 94-05-j0173 SUBFILE: FSTA

Production, growth, and nut quality in pecans under water stress based on the crop water stress index.

Garrot, D. J., Jr.; Kilby, M. W.; Fangmeier, D. D.; Husman, S. H.;
Ralowicz, A. E.

Dep. of Plant Sci., Univ. of Arizona, Tucson, AZ 85721, USA

Journal of the American Society for Horticultural Science 1993 , 118
(6) 694-698

NOTE: 21 ref.

DOCUMENT TYPE: Journal Article ISSN: 0003-1062

LANGUAGE: English

The crop water stress index (CWSI), based on the relationship between the canopy temp. of a well-watered plant in full sunlight and the atmospheric water content, numerically quantifies water stress. A 4-yr study was established to determine the long-term effect of water application levels on production, nut quality characteristics and growth of pecans (*Carya illinoensis* (Wangenh.) C. %%%Koch%% cv. Western Schley). Highest yields were attained when trees were relatively nonstressed (CWSI LESS THAN OR EQUAL 0.08). Trees subjected to moderate water stress before irrigation (CWSI GREATER THAN OR EQUAL 0.20) showed reduced yield, nut wt. and tree growth, although water-use efficiency increased. (Nut wt. was reduced 8% when water applied was decreased by 52%. Saleable and inedible kernel % and yield efficiency were unaffected by the %%%treatment%%.) With %%%water%% management practices resulting in max. yield, nut size and tree growth (CWSI LESS THAN OR EQUAL 0.08), tree water use varied by LESS THAN OR EQUAL 44% in the same orchard, depending on crop load and yearly climatic variations. (AS(VJG))

DESCRIPTORS (HEADINGS): Irrigation; Nuts

DESCRIPTORS: WATER; STRESS; PECAN NUTS

GENERAL DESCRIPTORS: Agriculture; Fruits; Seeds

17/7,DE/17 (Item 1 from file: 96)
DIALOG(R)File 96:FLUIDEX
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00422689 FLUIDEX NO: 0492281

Effect of different operation pressures for various membranes on the performance of RO plants

AUTHOR(S): Kahdim A.S.; Jassim A.A.; Ismail S.

CORPORATE SOURCE: Department of Chemical Engineering, University of Basrah,
Basrah, Iraq

AUTHOR EMAIL: noor.b@uruklink.net

Desalination, 155/3 (287-291), 2003

PUBLICATION DATE: July 10, 2003

CODEN: DSLNA ISSN: 0011-9164

COUNTRY OF PUBLICATION: Netherlands

PUBLISHER ITEM IDENTIFIER: S0011916403003060

DOCUMENT TYPE: Journal; Article

RECORD TYPE: ABSTRACT

LANGUAGES: English SUMMARY LANGUAGES: English

NO. OF REFERENCES: 5

The aim was to study the effect of different operation pressures on the performance of reverse osmosis (RO) plants for various types of membranes. The study was conducted in a pilot plant at the University of Basrah, College of Engineering, which has a capacity of 9m³/h. The plant is comprised of two parallel vessels containing five elements for each vessel, 8double prime in diameter and 40double prime in length. The first vessel has Saehane membranes, type RE8040BE-400 ft² manufactured in South Korea. %Koch% membranes, type 8822-XR-365 ft² made in the US, were used in the second vessel. The pilot plant uses brackish water from the Tigris River with TDS <600 ppm. The new type of RO membranes (Saehane) were used for the first trial for production of desalted water from brackish water less than 600 ppm and the results were compared with performance of the %Koch% membranes. It was found that over 180 days of continuous operation, the amount of permeate for Saehane membranes is larger than %Koch% membranes by about 26%. It was also observed that the quality of permeate water stream for %Koch% membranes is less than for the Saehane membranes by about 11%.

DESCRIPTORS: DESALINATION; MEMBRANE; MEMBRANE TECHNOLOGY; REVERSE OSMOSIS; PERFORMANCE ASSESSMENT; %WATER% %TREATMENT%; DRINKING %WATER%

17/7,DE/18 (Item 2 from file: 96)
DIALOG(R)File 96:FLUIDEX
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00405864 FLUIDEX NO: 0475264
Membranes tackle waste disposal and produce boiler feed water
AUTHOR(S): Atkinson S.
Membrane Technology, -/148 (9-11), 2002
ISSN: 0958-2118
COUNTRY OF PUBLICATION: United Kingdom
DOCUMENT TYPE: Journal; Article
RECORD TYPE: ABSTRACT
LANGUAGES: English SUMMARY LANGUAGES: English

Three UK case studies demonstrate the application of membrane technology developed by %Koch% Membrane Systems. Profin of Redditch is using a microfiltration system to cut the cost of degreasing water disposal while ensuring optimum operation of its electrophoretic paint plant. In operation around 125l/h or degreasing fluid is continuously drawn from baths, and a crossflow microfiltration membrane unit used to extract emulsion from the fluid before its return to the degreasing baths as clean washwater. Retentate is significantly reduced in the process. A membrane filtration plant specially developed for the regeneration of small and medium sized, aqueous degreasing baths is being used at Hygiena's Stockton on Tees kitchen manufacturing factory. %Koch%'s thin film composite, ultra low pressure (TFC-ULP) reverse osmosis membranes are being used by Anglia Water at its Flag Fen treatment works to produce high purity boiler feed water from sewage effluent for the nearby Peterborough power station.

DESCRIPTORS: SEWAGE %TREATMENT%; %WATER% %TREATMENT%; MEMBRANE TECHNOLOGY; EFFLUENT TREATMENT; WASTE REDUCTION; BOILER FEED

17/7,DE/19 (Item 3 from file: 96)
DIALOG(R)File 96:FLUIDEX
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00336630 FLUIDEX NO: 0405781

Methodology for accelerated pre-selection of UF type of membranes for large scale applications

AUTHOR(S): Doyen W.; Babee B.; Lambrechts F.; Leysen R.

Desalination, 117/1-3 (85-94), 1998

PUBLICATION DATE: September 20, 1998

ISSN: 0011-9164

COUNTRY OF PUBLICATION: Netherlands

DOCUMENT TYPE: Journal; Article

RECORD TYPE: ABSTRACT

LANGUAGES: English

This paper describes two assessment methods for UF type of membranes for large-scale applications. The combination of those two methods results in quite clear and unambiguous answers to the question what membranes are of interest for long-term testing. With the first method, called dead-end filtration method, information is generated on the suitability of the membrane and on the combination of the membrane material, the module hydraulics and assembly. With this method the evolution of TMP is monitored upon filtration cycles of 20 minutes with raw water at a flux rate of 120 l/h.m SUP 2 , alternated with backwash cycles with permeate of 40 seconds at 1.2 bar negative TMP. The second method, called cross-flow filtration method, gives exclusively information on the suitability of the membrane material. This is being done by the measurement of the absolute value of the so-called 'plateau fluxes' in cross-flow mode at 0.2 m/s linear velocity. For this purpose raw water concentrates are being used. Three 'open' UF type of membranes, all three in hollow fibre configuration were assessed with these two methods. It was shown that the PSf based membrane (%%Koch%% PM100) reached already after 4 filtration cycles a TMP of 1 bar and showed the lowest plateau flux (25 l/h.m SUP 2). This indicated that the membrane suffered from interaction with the raw water. Moreover, it is possible that something was wrong with the hydraulics of this membrane. The two other membranes were PES/PVP based. These membranes showed much less TMP increase over time. The first membrane of this type was X-Flow UFC, the second Stork Friesland Superfil 015-010. I was no problem to operate the first membrane for 18 hours without addition of chemicals for cleaning. The second membrane reached the maximum allowed TMP of 1 bar after 16 hours of operation at the end of the filtration cycle. Moreover, for both membranes a higher plateau flux value (35 l/h.m SUP 2) was found. Both observations indicate that this type of membrane material is much more interesting than PSf. It was also shown that the X-Flow membrane gives the lowest absolute TMP values, which is attributed to its higher pure water permeability (740 l/h.m SUP 2 .bar) as compared to the Stork Friesland membrane (pure water permeability of 350 l/h.m SUP 2 .bar) and the %%Koch%% membrane (pure water permeability of 290 l/h.m SUP 2 .bar). A last observation was a TMP increase of only 0.1 bar per cycle for the X-Flow membrane, as compared to 0.2 bar for the two others. This observation is in agreement with earlier made FESEM pictures of the inner surfaces. This means that the X-Flow membrane rather acts as a depth filter, whereas the two other membranes act as a surface filter.

DESCRIPTORS: ULTRAFILTRATION; MEMBRANE; %%WATER%% %%TREATMENT%%

17/7,DE/20 (Item 4 from file: 96)

DIALOG(R)File 96:FLUIDEX

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00172197 FLUIDEX NO: 0180162 SUBFILE: X

Turbulent mixing at high dilution ratio in a Sulzer-%%Koch%% static

mixer.

AUTHOR(S): Goldshmid J.; Samet M.; Wagner M.

Ind. & Engng. Chem.: Process Des. & Dev., vol.25, no.1, Jan. 1986,
p.108-116., 1986

DOCUMENT AVAILABLE: YES

ISSN: 0019-7882

RECORD TYPE: ABSTRACT

LANGUAGES: English

%%Water%% and sewage %%treatment%% calls for the addition of small quantities of chemicals to large bodies of water. Efficient utilization of the chemical added requires fast and complete mixing. An optimal combination of turbulent dispersion down to eddies of the Kolmogoroff scale and molecular diffusion would yield fast mixing on a molecular scale which in turn favours the desired reactions. A new theoretical model is presented for turbulent dispersion of mutually miscible liquids in a static mixer. The model predicts the rate of increase of the solute concentration in a dilute solution, from the rate of increase of the interfacial area and molecular diffusion equations. An analogy between the turbulent cascade process and the Lagrangian dispersion of the concentrated solution serves to calculate the rate of increase of the interfacial area. The model predicts that complete mixing on a molecular scale would be achieved in the Sulzer-%%Koch%% mixer, when the smallest eddies reach the Kolmogoroff scale. Experimental results obtained during the mixing of ozone solution in water, in a Sulzer-%%Koch%% static mixer, are presented. The results compare well with the theoretical predictions. (A)

17/7,DE/21 (Item 1 from file: 245)

DIALOG(R)File 245:WATERNET(TM)

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053893

California Department of Water Resources Pilot Study of Ultrafiltration for Possible Replacement of Current DWR Water Treatment Facilities

Panec, David L.

California Department of Water Resources, Sacramento, CA

2001 Membrane Technology Conference Proceedings; American Water Works Association San Antonio, TX

March 4-7, 2001

2001

Publ: AWWA

ISBN: 1-58321-096-2

Availability: AWWA

tables

Language: English

Document Type: Conf Proc

The California Department of Water Resources (DWR) has fourteen small conventional water treatment plants (WTP) located in four field divisions. These plants treat California State Project Water (California Aqueduct) water for industrial use (i.e. pump seals, cooling water, and air conditioning), irrigation, and employee and public consumption. Many of the treatment facilities are more than thirty years old and have exceeded their design life. Combined with increasingly stringent treatment regulations, many of the facilities have required significant refurbishment while operational costs have steadily increased. DWR headquarters and field division staff are now seeking less expensive treatment options. One possible alternative is replacement of the current facilities with ultrafiltration (UF) membrane treatment. Membrane treatment provides better and more consistent pathogen removal than conventional systems and can meet

anticipated future turbidity and pathogen regulations with minimal or no modifications. Also, membrane systems typically provide significant cost savings by reduced operation and maintenance costs. Ultrafiltration was chosen over other types of membrane treatment because of excellent pathogen removal, minimal pretreatment needs, potentially low disinfection requirements, and in turn, reduced disinfection byproduct formation. To prove ultrafiltration's viability, a pilot study was requested by the Operations and Maintenance Division, Environmental Assessment Branch Chief, and was developed and conducted by the Operations and Maintenance Division, Water Quality Section staff in conjunction with Delta Field Division staff. The pilot study involved renting two different UF membrane systems, one from Aquasource North America and another from Koch Membrane Systems. The pilot study was conducted at the John E. Skinner Fish Facility, began on June 11, 1999 and was completed on December 8, 1999 at a total cost of approximately \$271,000. The DWR ultrafiltration pilot study objectives were to: ascertain the effectiveness of ultrafiltration to treat State Project Water under high and low turbidity conditions; determine the minimum pretreatment requirements for acceptable ultrafiltration treatment performance; evaluate ultrafiltration's capability to remove total organic compounds (TOC) and dissolved organic compounds (DOC) for disinfection byproduct control; estimate the operational costs of ultrafiltration to treat State Project Water; provide an operational comparison of two different UF membrane systems; and, develop a cost and performance comparison of UF treatment versus two DWR treatment facilities.

Descriptors: Ultrafiltration ; Membranes ; Costs ; California ; Operation and Maintenance ; Turbidity ; Pretreatment ; Disinfection Byproducts ; Coagulants ; Trihalomethanes ; Organic Carbon ; Alum ; Metals ; Water Quality ; Filtration ; Pilot Plants

17/7,DE/22 (Item 2 from file: 245)
DIALOG(R)File 245:WATERNET(TM)
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007114 BK000065

Drinking Water and Health--Historical Note
Safe Drinking Water Committee, National Research Council
p 1-8, 1977
ISBN: 0-309-02619-9 LC: 77-089284
Availability: national academy press, 2101 Constitution Ave., N.W.,
Washington, DC 20418
references
Language: english
Document Type: Book

This introductory section provides a chronological overview of the quest for pure water as reviewed by Baker's 1948 classic work. Water treatment from the beginning of time is traced to Europe in the 1850s and the first clear proof that public water supplies could be the source of infectious human diseases. Further highlighted are the studies made by Koch on cholera and the importance of filtration in the German cities of the 1890s. History of water treatment in the United States is picked up in the 1880s. Special attention is paid to the importance of water filtration and chlorination, which are the most significant advances in water treatment. The historical note ends with a discussion of the incidence of waterborne diseases in present times.

Descriptors: Water Quality; Waterborne Diseases; History

17/7,DE/23 (Item 1 from file: 248)
DIALOG(R)File 248:PIRA

(c) 2003 Pira International. All rts. reserv.

00628762 Pira Acc. Num.: 20221520

Title: Processing of effluents containing flexo inks

Authors: Anon

Source: Flexo-Gravure Eur. no. 103, Sept. 2002, p. 6

ISSN: 0765-3204

Publication Year: 2002 ✓

Document Type: Journal Article

Language: French

Pira Subfiles: Printing and Publishing (PP); Printing Abstracts (PT)

Journal Announcement: 0302

Abstract: A partnership between France Flexo and %%Koch%% Membrane Systems. France has developed a technique that opens up a new potential in recycling waste water for converters. It is claimed that zero rejection can be attained. Membrane technology is a process of physical separation, requiring no chemicals and providing higher yields than traditional techniques. Whether ultrafiltration or reverse osmosis is used, the two techniques are functionally alike. A semi permeable membrane is used, which allows molecules smaller than the membrane pores to pass through, retaining larger molecules, entirely removing any impurities, which are collected and pumped to an ultrafiltration unit. %%Koch%% Membrane Systems has specialised in the production of membranes, ultrafiltration systems and inverse osmosis since 1962. France Flexo has been using ultrafiltration with membranes as separative technology since 1992. Pollutants, chiefly inks and suspension materials, amount to 1%, and are concentrated to 30%-35% and then sent for processing. %%Treated%% %%water%% is stored before being returned to printers. It still requires light rinsing in fresh %%water%% to complete %%cleansing%%. Inverse osmosis technology brings this pollution down to 80%. The water could equally be used to feed boilers. France Flexo has invested further in this technology. (1 fig)

Descriptors: CLEANING; ENVIRONMENTAL ISSUES; FLEXO INK; INKING SYSTEM; MEMBRANE; MOLECULE; RECYCLING; ULTRAFILTRATION; WASTE WATER

17/7,DE/24 (Item 2 from file: 248)

DIALOG(R)File 248:PIRA

(c) 2003 Pira International. All rts. reserv.

00544681 Pira Acc. Num.: 20145584

Title: Membrane filtration for processing flexoprint waste water (Part 2)

Authors: Paulitschek M, Rosler H W

Source: Flexo Tief Druck vol. 10, no. 4, July 1999, pp 16-18, 21

Publication Year: 1999

Document Type: Journal Article

Language: German

Pira Subfiles: International Packaging Abstracts (PK)

Journal Announcement: 9911

Abstract: The use of ultrafiltration to %%treat%% waste %%water%% from corrugated board flexo print operations is described. The strengths and weaknesses of the technique are discussed, based on trials with a %%Koch%% Abcor tubular membrane filter. Total ultrafiltration costs, including installation, running and labour, are estimated at DM51.08/cu m, providing an economically viable solution. (4 fig, 7 tab)

Descriptors: CORRUGATED BOARD; COSTING; FLEXOGRAPHY; MEMBRANE; ULTRAFILTRATION; WASTE WATER

17/7,DE/25 (Item 1 from file: 292)

DIALOG(R)File 292:GEOBASE(TM)

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01209725 SUPPLIER NO. 2505548

Effects of plant nutrition on the expression of abdominal discoloration in
Phytoseiulus persimilis (Acari: Phytoseiidae)

Bjornson S.; Raworth D.A.

ADDRESS: S. Bjornson, Department of Biology, Saint Mary's University, 923
Robie Street, Halifax, Nova Scotia, B3H 3C3, Canada

EMAIL: susan.bjornson@stmarys.ca

Canadian Entomologist, 135/1 (129-138), 2003

COUNTRY OF PUBLICATION: Canada

ISSN: 0008-347X

DOCUMENT TYPE: Journal; Article

LANGUAGES: English SUMMARY LANGUAGES: English; French

NO. OF REFERENCES: 19

The effect of plant nutrition on the expression of abdominal discoloration in *Phytoseiulus persimilis* Athias-Henriot was investigated. *Phytoseiulus persimilis* were fed spider mites, *Tetranychus urticae* %Koch% (Acari: Tetranychidae), that were reared on bean, *Phaseolus vulgaris* L. (Fabaceae), plants %treated% with distilled %water% or one of three concentrations of 20-20-20 fertilizer (0.6, 2.4, and 3.8 g/L). Symptoms observed in *P. persimilis* included white stripes along the sides of the body in the region of the Malpighian tubules, white coloration of the rectum, or a combination of these symptoms. The proportion of observations of white symptoms in *P. persimilis* increased in an asymptotic curvilinear fashion as fertilizer concentration increased. There was no significant difference in life-history characteristics of *P. persimilis* from the four treatments, including total fecundity, mean daily oviposition, oviposition period, post-oviposition period, or adult survival. Peak oviposition for mites from all treatments (4.9 eggs per female per day) occurred 2-3 days following mating. Thereafter, mean fecundity was greater than 4 eggs per female per day until day 11, and greater than 3 eggs per female per day until day 15, followed by a sharp decline. Following death, individual mites were examined for microsporidia, but none were detected. Results suggest that the expression of white abdominal discoloration in *P. persimilis* is related, at least in part, to plant nutrition; symptoms are an expression of normal excretory function in *P. persimilis*; and white abdominal discoloration does not necessarily affect predator performance.

DESCRIPTORS:

nutrition; color

SPECIES DESCRIPTORS:

Phytoseiulus persimilis; *Tetranychus urticae*; *Phaseolus vulgaris*

? t s17/6/1-27

17/6/1 (Item 1 from file: 34)

11443983 Genuine Article#: 654DD Number of References: 18

Title: Effects of plant nutrition on the expression of abdominal
discoloration in *Phytoseiulus persimilis* (Acari : Phytoseiidae) (

ABSTRACT AVAILABLE)

Publication date: 20030100

17/6/2 (Item 2 from file: 34)

10928478 Genuine Article#: 584BU Number of References: 28

Title: Fecundity in twospotted spider mite (Acari : Tetranychidae) is
increased by direct and systemic exposure to imidacloprid (ABSTRACT
AVAILABLE)

Publication date: 20020800

- 17/6/3 (Item 3 from file: 34)
09741067 Genuine Article#: 444EG Number of References: 41
Title: Variability in phenotypic traits in core and peripheral populations
of wild barley *Hordeum spontaneum* %%%Koch%%% (ABSTRACT AVAILABLE)
Publication date: 20000000
- 17/6/4 (Item 4 from file: 34)
09579747 Genuine Article#: 421RN Number of References: 32
Title: Effects of neem seed derivatives on behavioral and physiological
responses of the *Cosmopolites sordidus* (Coleoptera : Curculionidae) (
ABSTRACT AVAILABLE)
Publication date: 20010400
- 17/6/5 (Item 5 from file: 34)
09027364 Genuine Article#: 358JJ Number of References: 11
Title: Pyridaben baseline assays for adult female European red mite (Acari:
Tetranychidae) and eggs (ABSTRACT AVAILABLE)
Publication date: 20000400
- 17/6/6 (Item 6 from file: 34)
07390933 Genuine Article#: 159JL Number of References: 23
Title: Natural durability and %%%waterborne%%% preservative
%%treatability%% of tamarack (ABSTRACT AVAILABLE)
Publication date: 19990100
- 17/6/7 (Item 7 from file: 34)
05919888 Genuine Article#: XG819 Number of References: 23
Title: Postharvest disinfestation of diapausing and non-diapausing
twospotted spider mite (*Tetranychus urticae*) on persimmons: Hot water
immersion and coolstorage (ABSTRACT AVAILABLE)
Publication date: 19970500
- 17/6/8 (Item 8 from file: 34)
04099193 Genuine Article#: RE162 Number of References: 48
Title: ENVIRONMENT AND ONTOGENY MODIFY LOBLOLLY-PINE RESPONSE TO INDUCED
ACUTE WATER DEFICITS AND BARK BEETLE ATTACK (Abstract Available)
- 17/6/9 (Item 9 from file: 34)
03948037 Genuine Article#: QU694 Number of References: 0
Title: INFLUENCE OF YOUNG POTTED APPLE TREE WATER STATUS ON EUROPEAN RED
MITE (ACARI, TETRANYCHIDAE) ABUNDANCE (Abstract Available)
- 17/6/10 (Item 10 from file: 34)
03913489 Genuine Article#: QR334 Number of References: 9
Title: EFFICACY OF PACKED-COLUMN DESIGNS FOR REDUCING MORTALITY OF
RAINBOW-TROUT EGGS AND FRY (Abstract Available)
- 17/6/11 (Item 11 from file: 34)
02911450 Genuine Article#: MQ427 Number of References: 29
Title: EFFECTS OF LOW-TEMPERATURE AND ELEVATED CO2 TREATMENTS AND OF

HEAT-TREATMENTS FOR INSECT DISINFESTATION ON SOME NATIVE-AUSTRALIAN CUT
FLOWERS (Abstract Available)

17/6/12 (Item 12 from file: 34)
02596805 Genuine Article#: LP102 Number of References: 16
Title: COMPARING TURFGRASS CUMULATIVE EVAPOTRANSPIRATION CURVES (Abstract
Available)

17/6/13 (Item 13 from file: 34)
01651104 Genuine Article#: HP364 Number of References: 14
Title: INFLUENCE OF PESTICIDE TREATMENTS ON CONSUMPTION OF
TETRANYCHUS-URTICAE [ACARINA, TETRANYCHIDAE] EGGS BY
PHYTOSEIULUS-PERSIMILIS [ACARINA, PHYTOSEIIDAE] (Abstract Available)

17/6/14 (Item 1 from file: 51)
00868803 2002-Pa2033 SUBFILE: FSTA
Development of a standard cleaning protocol to evaluate the effect of
cleaning on membrane performance.
2002

17/6/15 (Item 2 from file: 51)
00835932 2001-H12651 SUBFILE: FSTA
Distillery waste %%%water%%% %%%treatment%%% by membrane ultrafiltration.
2001

17/6/16 (Item 3 from file: 51)
00676854 94-05-j0173 SUBFILE: FSTA
Production, growth, and nut quality in pecans under water stress based on
the crop water stress index.
1993

17/6/17 (Item 1 from file: 96)
00422689 FLUIDEX NO: 0492281
Effect of different operation pressures for various membranes on the
performance of RO plants
Desalination, 155/3 (287-291), 2003
PUBLICATION DATE: July 10, 2003

17/6/18 (Item 2 from file: 96)
00405864 FLUIDEX NO: 0475264
Membranes tackle waste disposal and produce boiler feed water
Membrane Technology, -/148 (9-11), 2002

17/6/19 (Item 3 from file: 96)
00336630 FLUIDEX NO: 0405781
Methodology for accelerated pre-selection of UF type of membranes for large
scale applications
Desalination, 117/1-3 (85-94), 1998
PUBLICATION DATE: September 20, 1998

17/6/20 (Item 4 from file: 96)

00172197 FLUIDEX NO: 0180162 SUBFILE: X
Turbulent mixing at high dilution ratio in a Sulzer-~~%%Koch%%~~ static mixer.
Ind. & Engng. Chem.: Process Des. & Dev., vol.25, no.1, Jan. 1986,
p.108-116., 1986

17/6/21 (Item 1 from file: 245)
053893
California Department of Water Resources Pilot Study of Ultrafiltration
for Possible Replacement of Current DWR Water Treatment Facilities 2001

17/6/22 (Item 2 from file: 245)
007114 BK000065
Drinking Water and Health--Historical Note 1977

17/6/23 (Item 1 from file: 248)
00628762 Pira Acc. Num.: 20221520
Title: Processing of effluents containing flexo inks
Publication Year: 2002

17/6/24 (Item 2 from file: 248)
00544681 Pira Acc. Num.: 20145584
Title: Membrane filtration for processing flexoprint waste water (Part 2)
Publication Year: 1999

17/6/25 (Item 1 from file: 292)
01209725 SUPPLIER NO. 2505548
Effects of plant nutrition on the expression of abdominal discoloration in
Phytoseiulus persimilis (Acari: Phytoseiidae)
2003
? t s17/7,de/15,17-19,21,22,24

17/7,DE/15 (Item 2 from file: 51)
DIALOG(R)File 51:Food Sci.&Tech.Abs
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00835932 2001-H12651 SUBFILE: FSTA
Distillery waste ~~%%water%%~~ ~~%%treatment%%~~ by membrane ultrafiltration.
Skelton, R.; Skerratt, G.; Flemming, R.
Koch Membrane Systems, The Granary, Telegraph St., Stafford, ST17 4AT,
UK. Tel. 01785 272500. Fax 01785 223149
Brewing & Distilling International 2001 , 32 (2) 10-12
DOCUMENT TYPE: Journal Article ISSN: 0308-1265
LANGUAGE: English

An ultrafiltration process for removal of excess Cu from distillery spent lees before it is sent to conventional waste ~~%%water%%~~ ~~%%treatment%%~~ is described. A ~~%%Koch%%~~ Membrane Systems installation using 12 Super-Cor modules is used. Trials at the Tomintoul Distillery in the Grampian region of Scotland are reported. This distillery is remote from mains drainage and has its own effluent treatment facilities; consent for discharge of treated effluent into the River Livet include a max. dissolved Cu concn. of 1.0 mg/l and a 95-percentile value LESS THAN OR EQUAL 0.5 mg/l. Typically, spent lees from the stills may contain Cu at 25-40 mg/l. The effluent is adjusted to pH 9-10 to precipitate Cu before it is passed through the ultrafiltration system; solids, including the precipitated Cu, are retained

by the membrane, while the liquid passes to the effluent treatment facilities. The membranes need washing with recycled permeate twice/wk and with a proprietary cleaning agent once/wk. Trials showed that this ultrafiltration installation is very successful in reduction of the Cu concn. in treated effluent. It is intended that the ultrafiltration unit will be operated intermittently, on an as-needed basis, to maintain Cu concn. in the treated effluents at acceptable levels.

DESCRIPTORS (HEADINGS): COPPER; DISTILLERIES; SPIRITS; ULTRAFILTRATION; WASTE WATER

DESCRIPTORS: CU; DISTILLERIES EFFLUENTS; WHISKY

DESCRIPTORS (TRADE/BRAND NAME): %Koch% Membrane Systems; Tomintoul Distillery

17/7,DE/17 (Item 1 from file: 96)
DIALOG(R)File 96:FLUIDEX
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00422689 FLUIDEX NO: 0492281

~~X~~ Effect of different operation pressures for various membranes on the performance of RO plants

AUTHOR(S): Kahdim A.S.; Jassim A.A.; Ismail S.

CORPORATE SOURCE: Department of Chemical Engineering, University of Basrah, Basrah, Iraq

AUTHOR EMAIL: noor.b@uruklink.net

Desalination, 155/3 (287-291), 2003

~~PUBLICATION DATE: July 10, 2003~~

CODEN: DSLNA ISSN: 0011-9164

COUNTRY OF PUBLICATION: Netherlands

PUBLISHER ITEM IDENTIFIER: S0011916403003060

DOCUMENT TYPE: Journal; Article

RECORD TYPE: ABSTRACT

LANGUAGES: English SUMMARY LANGUAGES: English

NO. OF REFERENCES: 5

The aim was to study the effect of different operation pressures on the performance of reverse osmosis (RO) plants for various types of membranes. The study was conducted in a pilot plant at the University of Basrah, College of Engineering, which has a capacity of 9m³/h. The plant is comprised of two parallel vessels containing five elements for each vessel, 8double prime in diameter and 40double prime in length. The first vessel has Saehane membranes, type RE8040BE-400 ft² SUP2 manufactured in South Korea. %Koch% membranes, type 8822-XR-365 ft² SUP2 made in the US, were used in the second vessel. The pilot plant uses brackish water from the Tigris River with TDS <600 ppm. The new type of RO membranes (Saehane) were used for the first trial for production of desalted water from brackish water less than 600 ppm and the results were compared with performance of the %Koch% membranes. It was found that over 180 days of continuous operation, the amount of permeate for Saehane membranes is larger than %Koch% membranes by about 26%. It was also observed that the quality of permeate water stream for %Koch% membranes is less than for the Saehane membranes by about 11%.

DESCRIPTORS: DESALINATION; MEMBRANE; MEMBRANE TECHNOLOGY; REVERSE OSMOSIS; PERFORMANCE ASSESSMENT; %WATER% %TREATMENT%; DRINKING %WATER%

17/7,DE/18 (Item 2 from file: 96)
DIALOG(R)File 96:FLUIDEX

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00405864 FLUIDEX NO: 0475264
Membranes tackle waste disposal and produce boiler feed water
AUTHOR(S): Atkinson S.
Membrane Technology, -/148 (9-11), 2002
ISSN: 0958-2118
COUNTRY OF PUBLICATION: United Kingdom
DOCUMENT TYPE: Journal; Article
RECORD TYPE: ABSTRACT
LANGUAGES: English SUMMARY LANGUAGES: English

Three UK case studies demonstrate the application of membrane technology developed by %%%Koch%%% Membrane Systems. Profin of Redditch is using a microfiltration system to cut the cost of degreasing water disposal while ensuring optimum operation of its electrophoretic paint plant. In operation around 125l/h or degreasing fluid is continuously drawn from baths, and a crossflow microfiltration membrane unit used to extract emulsion from the fluid before its return to the degreasing baths as clean washwater. Retentate is significantly reduced in the process. A membrane filtration plant specially developed for the regeneration of small and medium sized aqueous degreasing baths is being used at Hygiena's Stockton on Tees kitchen manufacturing factory. %%%Koch%%%s thin film composite, ultra low pressure (TFC-ULP) reverse osmosis membranes are being used by Anglia Water at its Flag Fen treatment works to produce high purity boiler feed water from sewage effluent for the nearby Peterborough power station.

DESCRIPTORS: SEWAGE %%%TREATMENT%%%; %%%WATER%% %%%TREATMENT%%%; MEMBRANE TECHNOLOGY; EFFLUENT TREATMENT; WASTE REDUCTION; BOILER FEED

17/7,DE/19 (Item 3 from file: 96)
DIALOG(R)File 96:FLUIDEX
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00336630 FLUIDEX NO: 0405781
Methodology for accelerated pre-selection of UF type of membranes for large scale applications
AUTHOR(S): Doyen W.; Babee B.; Lambrechts F.; Leysen R.
Desalination, 117/1-3 (85-94), 1998
PUBLICATION DATE: September 20, 1998
ISSN: 0011-9164
COUNTRY OF PUBLICATION: Netherlands
DOCUMENT TYPE: Journal; Article
RECORD TYPE: ABSTRACT
LANGUAGES: English

This paper describes two assessment methods for UF type of membranes for large-scale applications. The combination of those two methods results in quite clear and unambiguous answers to the question what membranes are of interest for long-term testing. With the first method, called dead-end filtration method, information is generated on the suitability of the membrane and on the combination of the membrane material, the module hydraulics and assembly. With this method the evolution of TMP is monitored upon filtration cycles of 20 minutes with raw water at a flux rate of 120 l/h.m SUP 2 , alternated with backwash cycles with permeate of 40 seconds at 1.2 bar negative TMP. The second method, called cross-flow filtration method, gives exclusively information on the suitability of the membrane material. This is being done by the measurement of the absolute value of the so-called 'plateau fluxes' in cross-flow mode at 0.2 m/s linear

velocity. For this purpose raw water concentrates are being used. Three 'open' UF type of membranes, all three in hollow fibre configuration were assessed with these two methods. It was shown that the PSf based membrane (%%Koch%% PM100) reached already after 4 filtration cycles a TMP of 1 bar and showed the lowest plateau flux (25 l/h.m SUP 2). This indicated that the membrane suffered from interaction with the raw water. Moreover, it is possible that something was wrong with the hydraulics of this membrane. The two other membranes were PES/PVP based. These membranes showed much less TMP increase over time. The first membrane of this type was X-Flow UFC, the second Stork Friesland Superfil 015-010. I was no problem to operate the first membrane for 18 hours without addition of chemicals for cleaning. The second membrane reached the maximum allowed TMP of 1 bar after 16 hours of operation at the end of the filtration cycle. Moreover, for both membranes a higher plateau flux value (35 l/h.m SUP 2) was found. Both observations indicate that this type of membrane material is much more interesting than PSf. It was also shown that the X-Flow membrane gives the lowest absolute TMP values, which is attributed to its higher pure water permeability (740 l/h.m SUP 2 .bar) as compared to the Stork Friesland membrane (pure water permeability of 350 l/h.m SUP 2 .bar) and the %%Koch%% membrane (pure water permeability of 290 l/h.m SUP 2 .bar). A last observation was a TMP increase of only 0.1 bar per cycle for the X-Flow membrane, as compared to 0.2 bar for the two others. This observation is in agreement with earlier made FESEM pictures of the inner surfaces. This means that the X-Flow membrane rather acts as a depth filter, whereas the two other membranes act as a surface filter.

DESCRIPTORS: ULTRAFILTRATION; MEMBRANE; %%WATER%% %%TREATMENT%%

17/7, DE/21 (Item 1 from file: 245)
DIALOG(R) File 245:WATERNET(TM)
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053893

California Department of Water Resources Pilot Study of Ultrafiltration for Possible Replacement of Current DWR Water Treatment Facilities

Panec, David L.

California Department of Water Resources, Sacramento, CA

2001 Membrane Technology Conference Proceedings; American Water Works Association San Antonio, TX

March 4-7, 2001

2001

Publ: AWWA

ISBN: 1-58321-096-2

Availability: AWWA

tables

Language: English

Document Type: Conf Proc

The California Department of Water Resources (DWR) has fourteen small conventional water treatment plants (WTP) located in four field divisions. These plants treat California State Project Water (California Aqueduct) water for industrial use (i.e. pump seals, cooling water, and air conditioning), irrigation, and employee and public consumption. Many of the treatment facilities are more than thirty years old and have exceeded their design life. Combined with increasingly stringent treatment regulations, many of the facilities have required significant refurbishment while operational costs have steadily increased. DWR headquarters and field division staff are now seeking less expensive treatment options. One possible alternative is replacement of the current facilities with ultrafiltration (UF) membrane treatment. Membrane treatment provides better

and more consistent pathogen removal than conventional systems and can meet anticipated future turbidity and pathogen regulations with minimal or no modifications. Also, membrane systems typically provide significant cost savings by reduced operation and maintenance costs. Ultrafiltration was chosen over other types of membrane treatment because of excellent pathogen removal, minimal pretreatment needs, potentially low disinfection requirements, and in turn, reduced disinfection byproduct formation. To prove ultrafiltration's viability, a pilot study was requested by the Operations and Maintenance Division, Environmental Assessment Branch Chief, and was developed and conducted by the Operations and Maintenance Division, Water Quality Section staff in conjunction with Delta Field Division staff. The pilot study involved renting two different UF membrane systems, one from Aquasource North America and another from Koch Membrane Systems. The pilot study was conducted at the John E. Skinner Fish Facility, began on June 11, 1999 and was completed on December 8, 1999 at a total cost of approximately \$271,000. The DWR ultrafiltration pilot study objectives were to: ascertain the effectiveness of ultrafiltration to treat State Project Water under high and low turbidity conditions; determine the minimum pretreatment requirements for acceptable ultrafiltration treatment performance; evaluate ultrafiltration's capability to remove total organic compounds (TOC) and dissolved organic compounds (DOC) for disinfection byproduct control; estimate the operational costs of ultrafiltration to treat State Project Water; provide an operational comparison of two different UF membrane systems; and, develop a cost and performance comparison of UF treatment versus two DWR treatment facilities.

Descriptors: Ultrafiltration ; Membranes ; Costs ; California ; Operation and Maintenance ; Turbidity ; Pretreatment ; Disinfection Byproducts ; Coagulants ; Trihalomethanes ; Organic Carbon ; Alum ; Metals ; Water Quality ; Filtration ; Pilot Plants

17/7,DE/22 (Item 2 from file: 245)
DIALOG(R)File 245:WATERNET(TM)
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007114 BK000065

Drinking Water and Health--Historical Note
Safe Drinking Water Committee, National Research Council
p 1-8, 1977

ISBN: 0-309-02619-9 LC: 77-089284

Availability: national academy press, 2101 Constitution Ave., N.W.,
Washington, DC 20418

references

Language: english

Document Type: Book

This introductory section provides a chronological overview of the quest for pure water as reviewed by Baker's 1948 classic work. Water treatment from the beginning of time is traced to Europe in the 1850s and the first clear proof that public water supplies could be the source of infectious human diseases. Further highlighted are the studies made by Koch on cholera and the importance of filtration in the German cities of the 1890s. History of water treatment in the United States is picked up in the 1880s. Special attention is paid to the importance of water filtration and chlorination, which are the most significant advances in water treatment. The historical note ends with a discussion of the incidence of waterborne diseases in present times.

Descriptors: Water Quality; Waterborne Diseases; History

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Title: Membrane filtration for processing flexoprint waste water (Part 2)

Authors: Paulitschek M, Rosler H W

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Abstract: The use of ultrafiltration to %%%treat%%% waste %%%water%%% from corrugated board flexo print operations is described. The strengths and weaknesses of the technique are discussed, based on trials with a %%%Koch%%% Abcor tubular membrane filter. Total ultrafiltration costs, including installation, running and labour, are estimated at DM51.08/cu m, providing an economically viable solution. (4 fig, 7 tab)

Descriptors: CORRUGATED BOARD; COSTING; FLEXOGRAPHY; MEMBRANE; ULTRAFILTRATION; WASTE WATER